

Application No. 10/026,351

IN THE CLAIMS:

Claim Amendments:

1. (original) A method for managing data storage in a memory, comprising:

creating at least two free link lists having entries designating available free memory locations;

tracking the number of entries in each of the free link lists;

identifying free memory locations as such locations become available for data storage; and

splicing available memory locations onto the shortest one of the free link lists.

2. (currently amended) The method of claim 1 wherein ~~each of the link lists~~available memory locations to be spliced onto the free link lists ~~is~~are structured as a freed memory link list comprising~~to maintain a head pointer, a head plus one pointer, and a tail pointer.~~

3. (currently amended) The method of claim 2 and including the steps of allocating from ~~a~~the head pointer of the freed memory link list and splicing from ~~the~~head plus one to a~~the~~tail pointer of the freed memory link list.

4. (original) The method of claim 3 and including the steps of simultaneously allocating and freeing memory locations.

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5. (currently amended) The method of claim 4 and including the step of setting ~~the~~ link-list-tail pointer of a free link list to the head pointer plus one of the freed memory link list.

6. (currently amended) The method of claim 3 and including the step of setting ~~the~~ link-list-tail pointer of a free link list to the head pointer plus one of the freed memory link list.

7. (currently amended) The method of claim 5 and including the step of setting the free link list tail pointer to the address of the tail of the last freed memory location.

8. (original) A method for managing data storage in a memory, comprising:

creating at least two free link lists identifying available data storage locations in the memory;

storing data in a plurality of data locations in the memory wherein each block of data is stored in a link list and each link list includes a head and a tail;

reading a head pointer from one of the free link lists to determine a beginning location of a block of data to be stored; and

simultaneously allocating data storage at a location of a head pointer of the other of the free link lists.

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9. (currently amended) The method of claim ~~6~~8 and including the step of maintaining a plurality of free link lists wherein each list identifies different lists of available memory.

10. (currently amended) The method of claim ~~7~~8 and including the step of adding available link lists to a shortest one of the free link lists so as to maintain balance between the free link lists.

11. (original) The method of claim 8 wherein the plurality of free link lists comprises two free link lists.

12. (currently amended) The method of claim ~~7~~8 and including the steps of simultaneously allocating and freeing memory in one memory cycle.